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PROJECT NO. 52373

REVIEW OF WHOLESALE ELECTRIC MARKET DESIGN	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

COMMENTS OF SOUTHERN POWER COMPANY

Southern Power Company ("SPC") respectfully submits these comments in response to the Public Utility Commission of Texas's ("Commission") request in Project No. 52373. SPC recommends specific market design improvements to better ensure longer-term electric system reliability, to incentivize ownership of a diverse set of supply-side and demand-side technologies, and to maintain regulatory and financial certainty in the Electric Reliability Council of Texas ("ERCOT") region. Specifically, SPC recommends that the Commission:

- Adopt a mandatory resource adequacy requirement (including a required reserve margin) for Commission-jurisdictional Load Serving Entities ("LSEs") to incentivize new generation and to help ensure that adequate generation resources are available when needed most,
- Change the shape of the Operating Reserve Demand Curve ("ORDC") to adopt a lower overall price cap and longer tail to ensure that generation resources remain financially and operationally viable, and maintain eligibility for all resources to receive ORDC without a new requirement for participation in the day-ahead market,
- Consider new Ancillary Services products to compensate resources for providing desired technical capabilities, and
- Increase participation of distributed energy resources ("DERs") to reduce peak electricity demand, promote load flexibility, and anticipate advanced energy technologies.

I. BACKGROUND ON SOUTHERN COMPANY AND SPC

Through its electric operating companies in three states, natural gas distribution companies in four states, a competitive generation company serving wholesale customers, a distributed energy infrastructure company, and a fiber optics network and telecommunications services company, Southern Company ("Southern") serves 9 million customers across the United States. SPC, a

subsidiary of Southern, is a leading wholesale energy provider meeting the electricity needs of municipalities, electric cooperatives, investor-owned utilities, and commercial and industrial customers. SPC and its subsidiaries own 54 facilities – including natural gas (61.1% of generating capacity), wind (17.5%), solar (19.8%), battery storage and fuel cells (1.5%) – operating or under construction in 14 states with more than 12,498 megawatts ("MW") of generating capacity. SPC owns four wind and three solar generation facilities totaling approximately 1,100 MW of generating capacity in the ERCOT region. SPC has a unique perspective as a competitive generation company because it owns and operates a diverse fleet of generating facilities in multiple power markets across the country and as an affiliate of three retail electric operating companies in the Southeast.[1]

Southern's retail electric operating companies perform resource planning through the Integrated Resource Plan ("IRP") process, which results in a plan to provide reliable and affordable electric service using a diverse portfolio of supply-side and demand-side resources including natural gas, coal, nuclear, hydro, wind, solar, and customer-oriented demand response programs. The IRP process includes load and generation forecasts, projections of future fuel costs, analysis of available and emerging supply-side and demand-side technologies, forward transmission planning, and assessments of various environmental, regulatory, and planning sensitivities. The overall result is a diverse portfolio of resources, each with its own technical capabilities and limitations, that collectively serve forecasted loads plus target reserve margins and contribute to reliable, clean, and affordable electric service. While IRPs ceased in ERCOT decades ago, Southern's more recent experience highlights a truth that applies for all grids—no one resource technology is superior to another and a diverse portfolio benefits consumers.

II. COMMENTS ON ERCOT MARKET DESIGN

SPC strongly supports efforts to improve the overall reliability and resiliency of the Texas electric grid. SPC respectfully requests that the Commission (1) adopt a mandatory resource adequacy requirement for Commission-jurisdictional LSEs, (2) change the shape of the ORDC by lowering the price cap and lengthening the tail, (3) maintain eligibility for all resources to receive

[1] Alabama Power, Georgia Power, and Mississippi Power are vertically integrated electric utilities regulated by their respective state utility commissions tasked with ensuring reliable and cost-effective electric service for their citizens.

ORDC for energy and reserves provided, (4) consider new Ancillary Services to compensate resources for desired capabilities, and (5) increase participation of DERs.

As the Commission looks to improve ERCOT market design, SPC cautions against market changes that create additional costs for renewable energy resources[2] that collectively have invested more than $70 billion in ERCOT. To preserve Texas' strong pro-business reputation, market changes adopted by the Commission should focus on "carrots" for the desired changes rather than "sticks" that penalize generators previously incentivized to come to the State.[3] Further, maintaining existing access to clean, low-cost electricity is vital to preserving Texas' strong pro-business reputation and its record of attracting businesses away from other states with more onerous energy policies. Continuity of the state's pro-business reputation and a commitment to regulatory and financial certainty will be critical as Texas looks to attract new investment dollars for additional electricity generation.

A. Implement a Mandatory Resource Adequacy Requirement

ERCOT's current energy-only market is predicated on the law of supply and demand incentivizing actions to increase electricity supply or reduce electricity usage. The energy-only construct pays generators only for the power produced and delivered to the transmission grid, with the price of that power varying based on the marginal cost of producing electricity, congestion impacts from transmission constraints, and the incremental value provided during grid scarcity conditions. If the system does not have adequate resources, more scarcity events occur, raising prices, and theoretically incentivizing new generation. However, multiple factors are contributing to lower electricity prices and a decreasing number of scarcity events. Additionally, the energy-only market creates "boom or bust" outcomes, with generation resources increasingly relying on a smaller number of scarcity events to recover their costs plus necessary returns.[4] There is also a disconnect in relying on short-term price signals to justify the financing of capital-intensive, long-term investments that are intended to be recovered over 30-50 years. An entity can decide to

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[2] Renewable generation constitutes a sizeable and valuable portion of the capacity in ERCOT. The June 2021 ERCOT Resource Capacity Trend Charts report shows 32,362 MW of installed wind capacity and 8,160 MW of installed solar capacity. The report can be found at http://www.ercot.com/gridinfo/resource.

[3] This focus on incentives instead of penalties matches with the underlying spirit of Sen. Schwertner's proposed Texas Energy Reliability Incentive Program and Texas Energy Reliability Loan Program, both of which were discussed during the Senate Business & Commerce hearing held on September 28, 2021.

[4] In other words, a resource's overall financial viability is increasingly relying on a decreasing number of scarcity events, the impact of which varies based on whether a resource has bilaterally sold its output to a counterparty and how the settlement terms are defined.

develop a generation facility due to high price signals and then see that pricing dynamic change significantly (e.g., due to changing resource mix, transmission upgrades, load and generation growth) in the time (often several years) it takes to achieve commercial operation. SPC has found that long-term certainty is preferable to short-term upside when evaluating significant investment opportunities.

In light of this background and Winter Storm Uri, SPC believes that adoption of a mandatory resource adequacy requirement for Commission-jurisdictional LSEs would better ensure long-term reliability in the ERCOT region. SPC does not support a centralized forward capacity market ("CFCM"), mostly because of its administrative complexity and potential issues caused by Minimum-Offer Price Rules. SPC also does not support requiring all generation resources to offer a minimum commitment in the day-ahead market as a precondition for participating in the energy market as such a requirement is inconsistent with the ERCOT generation mix, which includes more than 40,000 MW of variable resources. Instead, SPC recommends a market re-design that would require each Commission-jurisdictional LSE to procure sufficient resources to serve its forecasted load plus a reserve margin, and a residual auction would allow ERCOT to procure additional capacity as needed. This proposal is based conceptually on Option 4 recommended in the 2012 Brattle Group report on resource adequacy.[5] Under this construct, a new standard commodity called resource adequacy credits ("RACs") would be used to facilitate long-term bilateral contracting for resource adequacy. Each RAC[6] would represent one MW of qualified capacity and could be used by LSEs to satisfy their reliability requirement. LSEs that choose to self-supply or procure resources less than their reliability requirement would be able to procure resources from ERCOT at a residual auction-clearing price.

It is critical to accurately assign capacity values to resources for their expected reliability contribution during peak load conditions. Effective Load Carrying Capability ("ELCC")[7] is the amount of incremental load a resource is expected to reliably serve, while considering the probabilistic parameters of unserved load caused by forced outages, load uncertainty, intermittency

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[5] The Brattle Group, "ERCOT Investment Incentives and Resource Adequacy Report", filed on June 1, 2012, by ERCOT in Project No. 40268.

[6] An added benefit is the similarity of RACs to Renewable Energy Credits ("RECs"), which are already familiar to ERCOT and market participants.

[7] Other Independent System Operators and Regional Transmission Organizations are using ELCC or in process of creating rules to implement ELCC to accredit variable energy and energy storage resources. Additionally, ERCOT utilizes ELCC methods in its annual Estimation of the Market Equilibrium and Economically Optimal Reserve Margin studies. These methods could easily be extended to govern capacity accreditation in a resource adequacy construct.

of renewable energy production, and the interactive effects between resources. ELCC should be evaluated as the capacity accreditation methodology for ***all resources*** to determine qualified capacities. SPC also supports a seasonal resource adequacy construct (such as a Winter and Summer requirement) that strikes the proper balance between granularity and complexity, with extreme weather sensitivities used to inform required forecasted load and reserve margins and address the reliability needs required by different seasonal conditions.

A mandatory resource adequacy requirement with bilateral contracting and a residual auction has significant advantages, including (1) a strengthened system reliability by incentivizing long-term power procurement by Commission-jurisdictional LSEs, (2) improved revenue certainty and financing availability via long-term contracts for generation resources, (3) flexibility for LSEs to choose their desired resource mix through a portfolio of short-term, intermediate-term, and long-term power supplies, and (4) quicker and more cost-effective implementation than a more complex CFCM.

B. ORDC – Change the Shape and Maintain Eligibility for All Resources

Good market design assigns increasing value to energy and reserves provided during scarcity conditions when the probability of load shed increases. ERCOT achieves this through the ORDC, which represents the value of reserves at different reserve levels based on the Value of Lost Load and the Loss of Load Probability. A real-time price adder is used to reflect the increasing value provided by reserves as operating reserve levels fall. This adder is included in real-time energy pricing and real-time ancillary service imbalance payments to make resources indifferent to utilization of their capacity for energy or reserves.

As discussed previously, electricity prices and the number of scarcity events in ERCOT are decreasing,[8] putting financial pressure on dispatchable resources. To mitigate this effect, SPC recommends that the Commission change the shape of the ORDC by lowering the price cap and lengthening the tail. The result would be to lower the maximum reserve value during high reserve shortage conditions and to increase the value of reserves during less-stressed time periods. In other words, the ORDC would have a lower maximum reserve price but higher reserve prices would occur for given reserve shortages across more time intervals. This would better incentivize

[8] See the Independent Market Monitor's 2020 State of the Market Report, Figures A2 and A5, which can be found at https://www.potomaceconomics.com/markets-monitored/ercot/.

dispatchable resource ownership, by decreasing the impact of operational availability for any single scarcity event and by increasing the average energy price received over time.

The Commission should seek to promote technology-neutral rules that focus on needed operational characteristics associated with a reliable system, rather than specific technologies. Consistent with this technology-neutrality goal, all resources should continue to receive the ORDC adder for energy and reserves provided during times of operating reserve scarcity, as they provide reliability benefit by serving load and reducing load shed risk.[9] Changing ORDC payment eligibility[10] to include only dispatchable resources would result in discriminatory treatment of certain technologies, create regulatory uncertainty, and threaten the financial viability of renewable projects representing billions of dollars invested in Texas based on the existing regulatory compact. To the extent that changes to the ORDC significantly reduce project revenue, rural Texas communities with renewable generation resources likely will be harmed as lower project revenues can reduce property tax values for such facilities and reduce landowner payments. Finally, existing renewable power contracts would change from asset to liability because of disruption to contract settlements[11], and while it may be possible to amend existing contracts, significantly changing these contract terms will inevitably lead to varied interpretations, disputes, additional costs, uncertainty and, many times, an inability to modify contract terms. Such a significant retroactive market design change would make energy industry market participants and investors question future investments in Texas be they in non-dispatchable or dispatchable technologies.

C. Evaluate Ancillary Services Design and Cost Allocation

Ancillary Services are defined in the ERCOT Protocols as a "service necessary to support the transmission of energy to Loads while maintaining reliable operation of the Transmission Service Provider's transmission system using Good Utility Practice."[12] Currently ERCOT

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[9] *Cf.* PURA §35.004(e) ("The commission shall ensure that ancillary services necessary to facilitate the transmission of electric energy are available at reasonable prices with terms and conditions that are not unreasonably preferential, prejudicial, discriminatory, predatory, or anticompetitive.").

[10] While these comment focus specifically on ORDC adder payment eligibility, the same arguments apply to the Real-Time On-Line Reliability Deployment Price Adder ("RTORDPA").

[11] Many renewable power purchase agreements have settlement terms known as "contracts for differences", where a renewable facility is paid a fixed price in exchange for a defined real-time electricity price, many times a "Hub", which is a collection of different pricing nodes in a given area. If renewables were ineligible to receive ORDC, then they would only receive their nodal Locational Marginal Price that excludes ORDC, and then would pay a higher Hub price that would include dispatchable resource nodes and at times ORDC values.

[12] Ancillary Service definition under ERCOT Protocols Section 2.

procures Regulation Service, Responsive Reserve Service, and Non-Spinning Reserve Service that each serve a specific purpose in support of reliable grid operations.[13] Senate Bill 3 ("SB 3") requires the Commission to "evaluate whether additional services are needed for reliability in the ERCOT power region while providing adequate incentives for dispatchable generation." SPC supports the Commission's review of potential new services, which should incentivize the ownership of resources with certain desired technical capabilities. For example, a new Fuel Reliability Ancillary Service could pay resources to weatherize equipment, add dual fuel capabilities to generation facilities, or maintain onsite fuel storage. The Commission should evaluate ramp and uncertainty products, which pay resources to hold back dispatchable capability in reserve to respond to unexpected net load variations, and that have been implemented or are in the process of being implemented in other markets.[14]

Additionally, SB3 requires the Commission to require ERCOT to "modify the design, procurement, and cost allocation of ancillary services for the region in a manner consistent with cost-causation principles and on a nondiscriminatory basis". To a certain extent, all loads and generation resources benefit from the provision of Ancillary Services and contribute to their need. Load benefits from Ancillary Services facilitating the reliable delivery of electricity, which is essential to everyday modern life. Generators are paid for the delivery of their electrical output to consumers via a reliable transmission system. Generation of all types benefits from the system reliability provided through Ancillary Services as they sell electric power on the ERCOT grid. Load and generation also create the need for Ancillary Services to respond to uncertainties – such as load forecast error, intermittency of renewable generation, load and generation forced outages, and the need to plan for the forced outage of the largest resource on the system – and thus also cause the costs incurred.

D. Increase DER Participation

DERs can provide significant benefits to the grid by generating electricity, providing Ancillary Services, reducing electricity consumption, increasing resiliency, and avoiding

[13] NPRR 863 created ERCOT Contingency Reserve Service ("ECRS"), a new Ancillary Service intended to help restore frequency to 60 Hertz within 10 minutes of a significant frequency deviation. ECRS is planned to be implemented after the ERCOT Energy Management System upgrade.

[14] California Independent System Operator is working on an imbalance reserve product and the Southwest Power Pool on an uncertainty product.

necessary system upgrades. DERs can be thought of broadly as any resource located on the distribution system, any subsystem thereof or behind a customer meter, and include (but are not limited to) electric storage resources, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles.[15] The significant increase in electric demand and inability to deliver electric output from generation resources across the transmission and distribution systems exacerbated Winter Storm Uri's impact on Texans. The Commission should conduct a study to determine more appropriate electric energy efficiency goals and programs for Texas, in order to reduce both energy use and peak loads, with a certain percentage of savings required on retrofits for low-income and multi-family housing. Reliability and price-responsive demand response should be increased to provide ERCOT more flexibility in operating the system, responding to contingencies, and maintaining system health to avoid load shed. The Commission should expand Transmission and/or Distribution Service Provider load management programs and Retail Electric Provider price-responsive programs, considering time-of-use rate options and upfront enrollment incentives. ERCOT has approved multiple revision requests that more clearly define registration, modeling, and pricing for DERs which are expected to be implemented sometime in 2022. The Commission should direct ERCOT to continue refining DER rules with lessons learned over time and respond as the adaptation of advanced electric technologies increases.

III. CONCLUSION

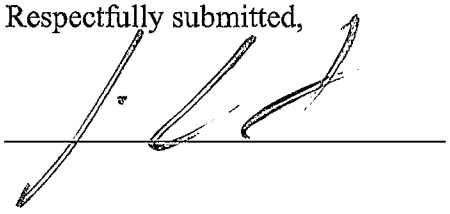
SPC urges the Commission to consider and adopt the wholesale electric market design proposals set forth in these comments. It is crucial that the Commission create a market design that maintains regulatory stability and financial certainty and promotes long-term resource adequacy. SPC's affiliated retail electric operating companies have benefited from integrating a diverse portfolio of supply-side and demand-side resources, which all add unique benefits and limitations. SPC believes that the proposed mandatory resource adequacy requirement is the best option to assure long-term reliability outcomes and incentivize ownership of all generation resource types via long-term contracts. Changing the shape of ORDC can provide additional incentive for dispatchable resources, and all resources should continue to be eligible to receive ORDC payments. The Commission should further study design and cost allocation of Ancillary

[15] FERC Order No. 2222, paragraph 1.

Services with the objective of incentivizing desired technical capabilities for reliable operations. Finally, the Commission should require increased DER participation to reduce peak electricity demand, promote load flexibility, and prepare for the future of the Texas electric system.

Dated: September 30, 2021

Respectfully submitted,



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EXECUTIVE SUMMARY
COMMENTS OF SOUTHERN POWER COMPANY

As requested by the Commission Staff, Southern Power Company ("SPC") submits this executive summary of its comments in bullet point form. SPC recommends that the Commission:

- Adopt a mandatory resource adequacy requirement (including a required reserve margin) for Commission-jurisdictional Load Serving Entities ("LSEs") to incentivize new generation and to help ensure that adequate generation resources are available when needed most.
    - SPC recommends a market re-design that would require each Commission-jurisdictional LSE to procure sufficient resources to serve its forecasted load plus a reserve margin, and a residual auction would allow ERCOT to procure additional capacity as needed. This proposal is based conceptually on Option 4 recommended in the 2012 Brattle Group report on resource adequacy.[16]
- Change the shape of the Operating Reserve Demand Curve ("ORDC") to adopt a lower overall price cap and longer tail to ensure that generation resources remain financially and operationally viable, and maintain eligibility for all resources to receive ORDC without a new requirement for participation in the day-ahead market.
    - All resources should continue to receive the ORDC adder for energy and reserves provided during times of operating reserve scarcity, as they provide reliability benefit by serving load and reducing load shed risk.
- Consider new Ancillary Services products to compensate resources for providing desired technical capabilities.

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[16] The Brattle Group, "ERCOT Investment Incentives and Resource Adequacy Report", filed on June 1, 2012, by ERCOT in Project No. 40268.

- A new Fuel Reliability Ancillary Service could pay resources to weatherize equipment, add dual fuel capabilities to generation facilities, or maintain onsite fuel storage.
- The Commission should evaluate ramp and uncertainty products, which pay resources to hold back dispatchable capability in reserve to respond to unexpected net load variations, and that have been implemented or are in the process of being implemented in other markets.

- Increase participation of distributed energy resources ("DERs") to reduce peak electricity demand, promote load flexibility, and anticipate advanced energy technologies.